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Amendment dated 09/27/2004

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The following is a complete listing of all claims in the application, with an indication of the status of each:

**Listing of claims:**

- 1           1. (currently amended) A packet switch for controlling flow of data in a  
2           network, comprising:  
3                 a plurality of input ports;  
4                 a plurality of output ports;  
5                 a scheduler having N (natural number) in number of input port  
6           scheduling modules reserving a particular input port among said plurality of  
7           input ports for feeding data to a designated output port among said plurality of  
8           output ports and determining connecting condition between said input port  
9           and said output port, each said input port scheduling module being a current  
10          scheduling module in relation to a preceding stage and a next stage,  
11          in said scheduler, each of said input port scheduling ~~module~~ modules  
12          receiving reservation condition information of a certain time slot from the  
13          input port scheduling module in the preceding stage and determining  
14          permission or rejection of reservation of packet transmission from said  
15          preceding stage input port scheduling module in said reservation time slot, per  
16          time slot  
17          each of said current scheduling modules ~~module~~ including  
18          means for reservation of packet transmission ~~referring~~ referring the  
19          reservation condition information received from the scheduling module in the  
20          preceding ~~preceding~~ stage and the ~~reservation~~ reservation request of ~~own~~ said  
21          current scheduling module and transmitting the result of said reservation of  
22          packet transmission to the scheduling module in the next stage;

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23 means for defining a frame consisted of N in number of time slots and  
24 performing reservation in N time slots in a next frame in a current frame  
25 period;  
26 means, in the current scheduling module, for receiving said reservation  
27 condition information from the preceding scheduling module;  
28 means, in the current scheduling module, for preliminarily determining  
29 a future time slot to access one of said plurality of output ports as the  
30 particular time slot in the next frame;  
31 means for selecting one of said plurality of output ports for reservation  
32 for transmitting in said future time slot;  
33 means for making judgment whether said future time slot has already  
34 been reserved by ~~other~~ another scheduling module;  
35 means for making reservation of said future time slot when said future  
36 time slot is not reserved by ~~other~~ another scheduling module and putting  
37 information ~~indicative~~ indicating that said future time slot is reserved in said  
38 reservation condition information;  
39 means for transferring said reservation condition information to next  
40 input port scheduling module,  
41 considering in viewpoint of reservation process in the time slot,  
42 said reservation process being initiated simultaneously at the leading  
43 end of the frame, being progressed simultaneously in pipeline process, and  
44 completing simultaneously at the end of the frame;  
45 each said input port scheduling module having  
46 means for initiating process for respectively different reservation time  
47 slot in the next frame in each of a plurality of said reservation processes which  
48 are initiated simultaneously at the leading end of the frame; and  
49 ~~reservation order varying~~ means for varying an order of said  
50 ~~reservation~~ reservations by said plurality of scheduling ~~module~~ modules,

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51                   said plurality of input port scheduling modules making reservation of  
52           ports to output with respect to a packet for next frame per each frame in the  
53           varied order.

1           2. (original) A packet switch as set forth in claim 1, wherein said plurality of  
2           scheduling modules performs said reservation in an order corresponding to  
3           logical connection order relative to other modules, said reservation order  
4           varying means varies a connection topology of said plurality of scheduling  
5           modules.

1           3. (original) A packet switch as set forth in claim 1, wherein said reservation  
2           order varying means includes a switch performing switching operation for  
3           varying logical connecting condition of said plurality of scheduling modules  
4           and a table storing control data for controlling switching operation of said  
5           switch.

1           4. (currently amended) A packet switch as set forth in claim 3, wherein  
2           physical connection between said plurality of scheduling ~~module~~modules and  
3           said varying switch is an electrical connection.

1           5. (currently amended) A packet switch as set forth in claim 3, wherein  
2           physical connection between said plurality of scheduling ~~module~~modules and  
3           said varying switch is an optical connection.

1           6. (original) A packet switch as set forth in claim 3, wherein said table is  
2           provided in each of said plurality of scheduling modules.

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1        7. (original) A packet switch as set forth in claim 3, wherein said table is  
2        provide in common for said plurality of scheduling modules.

1        8. (currently amended) A packet switch as set forth in claim 3, wherein said  
2        control data is data for controlling switching operation of said switch for  
3        varying time ~~slot~~slots for initiating reservation of said plurality of scheduling  
4        modules per each frame at the leading end of each frame.

1        9. (currently amended) A packet switch as set forth in claim 3, wherein said  
2        control data is data for realizing scheduling equalizing use frequency of  
3        reservation start ~~slot~~slots for initiating said reservation by a plurality of  
4        scheduling modules.

1        10. (currently amended) A packet switch as set forth in claim 3, wherein said  
2        control data is data for realizing scheduling equalizing use order and use  
3        frequency of reservation start ~~slot~~slots for initiating said reservation by a  
4        plurality of scheduling modules.

1        11. (currently amended) A packet switching method for determining  
2        connecting condition between input ports and output ports by making  
3        reservation for particular input port among a plurality of input ports for  
4        feeding data to a designated output port among a plurality of output ports in a  
5        scheduler of a switch having N in number of input port scheduling modules,  
6        each said input port scheduling module being a current scheduling module in  
7        relation to a preceding stage and a next stage, comprising:  
8                step of receiving reservation condition information of a certain time  
9        slot from the input port scheduling module in the preceding stage;

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10                   step of determining permission or rejection of reservation of packet  
11           transmission from said preceding stage input port scheduling module in said  
12           reservation time slot, per time slot  
13                   step of ~~reservatin~~reservation of packet transmission ~~referring~~referring  
14           the reservation condition information received from the scheduling module in  
15           the preceding stage and the reservation request of ~~own~~the current scheduling  
16           module and transmitting the result of said reservation of packet transmission  
17           to the scheduling module in the next stage ;  
18                   ~~step of means, in the current scheduling module, for receiving by the~~  
19           current scheduling module said reservation condition information from the  
20           preceding scheduling module;  
21                   ~~step of means, in the current scheduling module, for preliminarily~~  
22           determining by the current scheduling module a future time slot to access one  
23           of said plurality of output ports as the particular time slot in the next frame;  
24                   step of selecting one of said plurality of output ports for reservation for  
25           transmitting in said future time slot;  
26                   step of making judgment whether said future time slot has already been  
27           reserved by ~~other~~another scheduling module;  
28                   step of making reservation of said future time slot when said future  
29           time slot is not reserved by ~~other~~another scheduling module and putting  
30           information ~~indicative~~indicating that said future time slot is reserved in said  
31           reservation condition information;  
32                   step of transferring said reservation condition information to next  
33           scheduling module,  
34                   considering in viewpoint of reservation process in the time slot,  
35                   said reservation process being initiated simultaneously at the leading  
36           end of the frame, being progressed simultaneously in pipeline process, and  
37           completing simultaneously at the end of the frame;

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38 step of initiating process for respectively different reservation time slot  
39 in the next frame in each of a plurality of said reservation processes which are  
40 initiated simultaneously at the leading end of the frame; and  
41 ~~reservation order varying~~ step of varying an order of said ~~reservation~~  
42 reservations by said plurality of scheduling ~~module~~ modules, and making  
43 reservation of ports to output with respect to a packet for next frame per each  
44 frame in the varied order.

1 12. (currently amended) A packet switching method as set forth in claim 11,  
2 wherein said plurality of scheduling modules performs said reservation in an  
3 order corresponding to logical connection order relative to other modules, said  
4 reservation order varying means ~~varies~~ varying a connection topology of said  
5 plurality of scheduling modules.

1 13. (original) A packet switching method as set forth in claim 11, wherein  
2 said reservation order varying means includes a switch performing switching  
3 operation for varying logical connecting condition of said plurality of  
4 scheduling modules and a table storing control data for controlling switching  
5 operation of said switch.

1 14. (currently amended) A packet switching method as set forth in claim 13,  
2 wherein physical connection between said plurality of scheduling ~~module~~  
3 modules and said varying switch is an electrical connection.

1 15. (currently amended) A packet switching method as set forth in claim 13,  
2 wherein physical connection between said plurality of scheduling ~~module~~  
3 modules and said varying switch is an optical connection.

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1        16. (original) A packet switching method as set forth in claim 13, wherein  
2        said table is provided in each of said plurality of scheduling modules.

1        17. (original) A packet switching method as set forth in claim 13, wherein  
2        said table is provide in common for said plurality of scheduling modules.

1        18. (currently amended) A packet switching method as set forth in claim 13,  
2        wherein said control data is data for controlling switching operation of said  
3        switch for varying time ~~slot~~slots for initiating reservation of said plurality of  
4        scheduling modules per each frame at the leading end of each frame.

1        19. (currently amended) A packet switching method as set forth in claim 13,  
2        wherein said control data is data for realizing scheduling equalizing use  
3        frequency of reservation start ~~slot~~slots for initiating said reservation by a  
4        plurality of scheduling modules.

1        20. (currently amended) A packet switching method as set forth in claim 13,  
2        wherein said control data is data for realizing scheduling equalizing use order  
3        and use frequency of reservation start ~~slot~~slots for initiating said reservation  
4        by a plurality of scheduling modules.